CUSTOMER NO. 04249

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	James M. Tibbitt, Paul J. Cahill, George E. Rotter, David P. Sinclair, Gary T. Brooks, Raymond T. Behrends	) PATENT) APPLICATION
APPLICATION NO:	10/028,167	) GROUP ART UNIT:
CONFIRMATION NO.:	3418	) 1773
FILED:	October 25, 2001	) EXAMINER:) Vivian Chen
FOR:	Oxygen Scavenging Monolayer Bottles	) ATTORNEY DOCKET NO. 5270

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Commissioner of Patents and Trademarks, Alexandria, VA. 22313-1450 on or before 3-23-04

Paralegal, IP Group

Date: 3-23-04

DECLARATION UNDER 37 CFR 1.132 OF MATTHEW A. KULZICK

Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

1. I, Matthew A. Kulzick, residing at 3 S, 620 Melcher Avenue, Warrenville Illinois, make this declaration in support of the above-identified patent application.

2. I was awarded a Bachelor of Science degree in Chemistry from University of Wisconsin in 1980, and a Doctor of Philosophy degree in Inorganic Chemistry from University of California-Berkeley in 1984.

3. Since attaining my PhD in 1984, I have been employed as a research scientist at BP Amoco Chemical Company. I have worked in research and development in the organic chemistry and polymer science fields. Since the late 1980's, I have been involved virtually exclusively with development of new polymer products. I am a named inventor or co-inventor

on nine (9) patents relating polymer compositions and products and processes related thereto.

4. In 2001 I became responsible for formulation development for active scavenger polymers which were marketed by BP Amoco Chemical Company under the trade name "Amosorb."

5. I am making this Declaration to support a showing of non-obviousness of the haze limitations set forth in Claim 1 of the current application when viewed in light of the Speer et al patents cited by the Examiner.

6. In preparation of this Declaration, I have read the patents cited by the Examiner, namely, U.S. Patent Nos. 5,350,622 and 5,700,554 to Speer et al, and the Office Action of the U.S. Patent and Trademark Office mailed October 1, 2003.

7. An important feature of the invention described and claimed in Claim 1 of the present patent application is the clarity of the monolayer polyester package for oxygen sensitive products.

8. I repeated Example 26 of the `554 patent which is identical to Example 26 of the `622 patent. Films were prepared via melt blending and pressed as described in Column 12, Footnote h of the '554 patent. 40g of 1,2 polybutadiene obtained from Scientific Polymer Products was mixed with 0.152g of 12% by weight cobalt, in the form of cobalt-bis-ethylhexanoate solution in mineral spirits (Nuxtra Nuodex) obtained from Condea Servo. This produced a loading level of approximately 500 ppm of cobalt based on the weight of the polymer. A 10 mil thick film was pressed at 130°C using a lab press. The films were quenched by immersion in ice water to prevent crystallization and make as clear a film as possible. The haze values were measured on a Hunter Lab Ultra Scan Sphere as taught in the present patent application on page 30 of the specification. The haze value, as shown in Table 1, was 2.54

9. I also repeated Example 27 of the `554 and `622 patent which blends low density polyethylene (LDPE) with 1,4 polybutadiene. 30 g of low density polyethylene from BP Chemicals, Novex 19N430 (MFR = 7.5g/10min),

10 g of cis-/trans-1,4 polybutadiene from Scientific Polymer Products and 0.147g Nuxtra Neodex solution were combined in a Haake mixing bowl for 15 mins at 130 °C. This produced a 3:1 blend of polyethylene and polybutadiene containing approximately 500 ppm of cobalt. A film weighing 3.6 g and 10 mils thick was pressed and the haze value measured on a Hunter Lab Ultra Scan Sphere. The haze value, as shown in Table 1, was 34.31

10. I repeated Example 27 of the `554 and `622 patent in accordance with the procedure set forth in para 9 above using 1,2 polybutadiene as component (a) instead of cis-/trans-1,4 polybutadiene. 0.172g of cobalt solution was used. I selected 1,2 polybutadiene because the Speer patents teach that it is the preferred component (a) when using polyethylene as the diluent. The haze of the film resulting from this modified Example 27, as shown in Table 1, was 6.91.

11. I repeated Example 29 of the `554 and `622 patent by combining 3.52g EVA-28, an ethylene-vinyl acetate copolymer containing 28% vinyl acetate obtained from Scientific Polymer Products, with 0.928g of Castung 103 GH castor oil obtained from Caschem, 17.3 mg of Nuxtra Manganese, which is a 12% solution of manganese-bis-ethylhexanoate in mineral sprits, and 37 milliliters of tetrahydrofuran, obtained from Fischer Scientific product number T425-4 containing residual peroxide as described in the '554 patent, in a 250 ml flat-bottom boiling flask. The flask was heated to reflux until the ingredients dissolved completely and then cooled to room temperature. Solvent was removed by evaporating the tetrahydrofuran with a nitrogen purge over eighteen hours. The film was weighed to establish that the solvent had been removed. The dry film was easily peeled from the flask and was measured to have a thickness of 1.6 mm in the flat center section. The optical properties of the film were determined as described above by measurement of the flat center of the sample and the haze value, as shown in Table 1, was 50.17.

12. I next repeated Example 30 as described in paragraph 11 using 3.61 g EVA-40, a ethylene-vinyl acetate copolymer with a 40% vinyl acetate content obtained from Scientific Polymer Products, 0.182 g Castung 103 GH

castor oil, 14.5 mg of Nuxtra Manganese, and 44 ml of dichloromethane solvent. This yielded a clear film with a thickness of 1.3 mm with a haze value, as shown in Table 1, of 22.54.

13. I next applied the teachings in Speer to polyester packaging. I blended PET (M&G 8006) with 1,2 polybutadiene, 1,4 polybutadiene, and castor oil in accordance with the teachings in Example 27 following the procedure set forth in para 9 above except the temperature was raised to 260-265°C due to the higher melting point of polyester versus polyethylene. In the case of castor oil, I prepared the blends by melt processing since this is a preferred method of the patent and PET is not soluble in the solvents described in Examples 29 and 30. Films were prepared as described above in paragraphs 8-10 and were pressed at 290°C for the polybutadiene blends and at 260°C in the case of the castor oil blends. It should be noted that the blends of PET and castor oil were exuding castor oil when the films were under pressure in the film forming process. This illustrates the high incompatibility of PET and castor oil. The PET/castor oil film made in accordance with Example 29 was extremely brittle and did not form a cohesive film as illustrated in Exhibit 1. The resulting haze values for these films are all over 60 and are listed in Table 1.

14. Attached as Exhibit 1 are digital photos of the films made in support of this Declaration. This visually illustrates the haze of each film. Table 1 below provides the actual haze values as measured. L, a, and b represent degrees of white or black, red or green, and blue or yellow respectively and are commonly used in industry to indicate color of film samples. YI is yellow index, another common color indicator.

15. It is unexpected and a surprising result that Applicants are able to make a monolayer polyester package for oxygen sensitive products comprised of an oxygen scavenging composition wherein the haze value is less than about 8% because of the compatibility issue between polyester and known oxygen scavenging compositions. Prior to Applicants' invention, known oxygen scavenging compositions, and particularly those taught in the

Speer patents, were incompatible with PET and resulted in hazy monolayer packaging materials.

Table 1

ID	L*	a*	b*	Haze	YI
AIR	100	0	0	0.17	0
1,2PBD 25/PET 75	89.35	0.4	5.52	60.49	11.02
1,4PBD 25/PET 75	83.66	0.43	11.14	67.35	22.3
1,2PBD 25/LDPE 75	95.55	0.33	1.97	6.91	4.03
1,4PBD2 5/LDPE 75	94.32	-0.41	4.54	50.67	7.95
1,2PBD 100	95.72	0.22	0.12	2.54	0.43
1,4PBD 100	95.53	0.28	0.28	34.31	0.78
EVA-28/castor oil	91.08	0.10	9.75	50.17	19.14
EVA-40/castor oil	94.21	0.25	2.17	22.54	4.58
PET/castor oil ex 29	65.86	4.78	30.36	68.69	66.77
PET/castor oil ex 30	75.16	1.99	23.19	68.28	47.43

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful and false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. section 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dr Matthew A. Kulzick

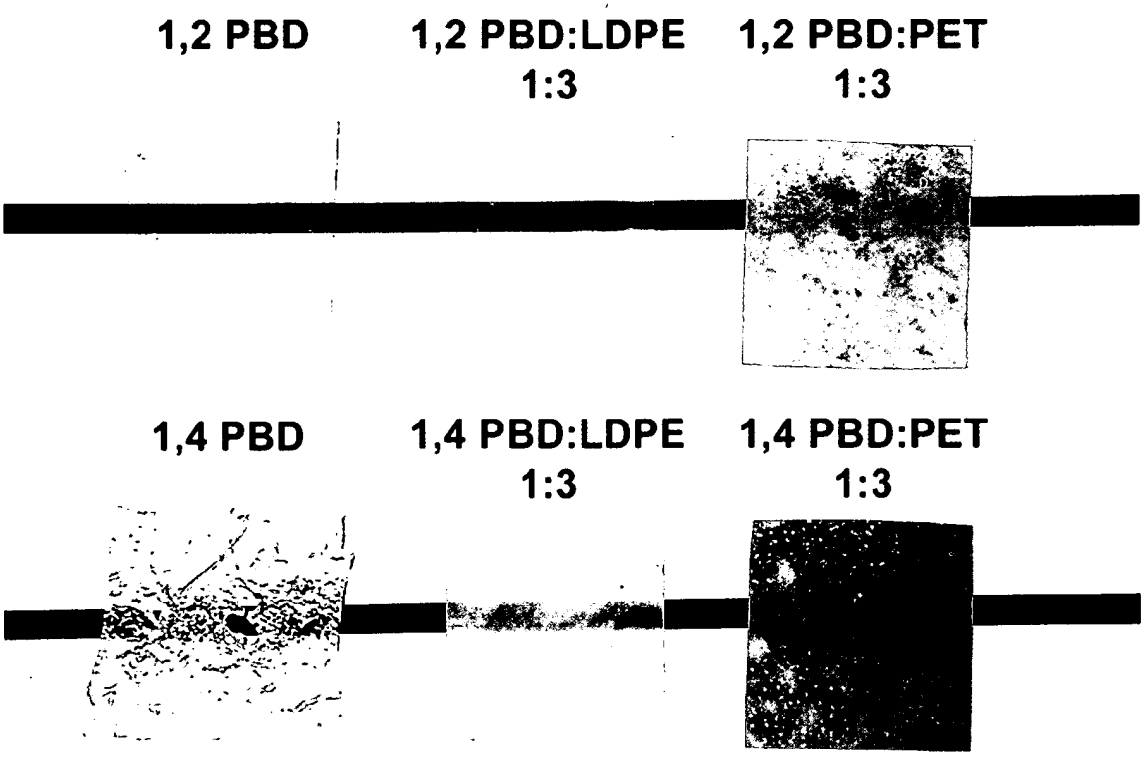
Dr. Matthew A. Kulzick

03-18-2004

Date

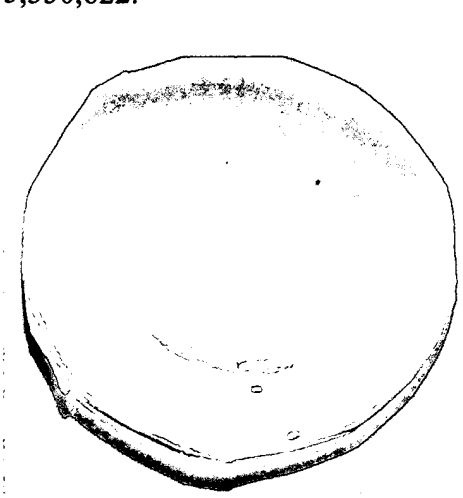
Exhibit 1- Films Made in Support of Declaration

Repeat of Examples 26 and 27 of US Patent No. 5,700,554 and 5,350,622 using LDPE as diluent polymer and then substituting PET as diluent polymer.



Each film is approximately 10 mils thick.
Each film has 500 ppm Co content.

Repeat of Examples 29 and 30 (Castor Oil and EVA)of US Patent No. 5,700,554 and 5,350,622.

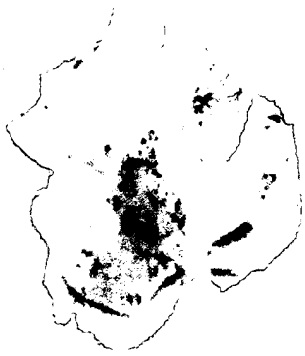


Example 29

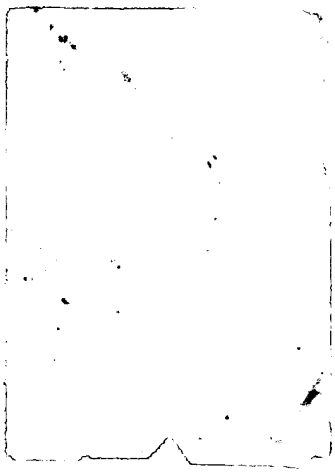
Example 30

Films prepared by solvent casting solution under Nitrogen.

Repeat of Example 29 and 30 of US Patent No. 5,700,554 and 5,350,622, substituting PET for EVA



Example 29 W/PET



Example 30 W/PET

Films prepared by melt blends of starting materials in Haake mixing bowl. Extrudates then pressed into films using a Wabash Press.